

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P332224

Luminaire Tested: **S123DIW-S1165D1030U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332224  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S1165D1030U835-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1030 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8975.7 lumens  
Efficiency: N/A  
Efficacy: 133.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

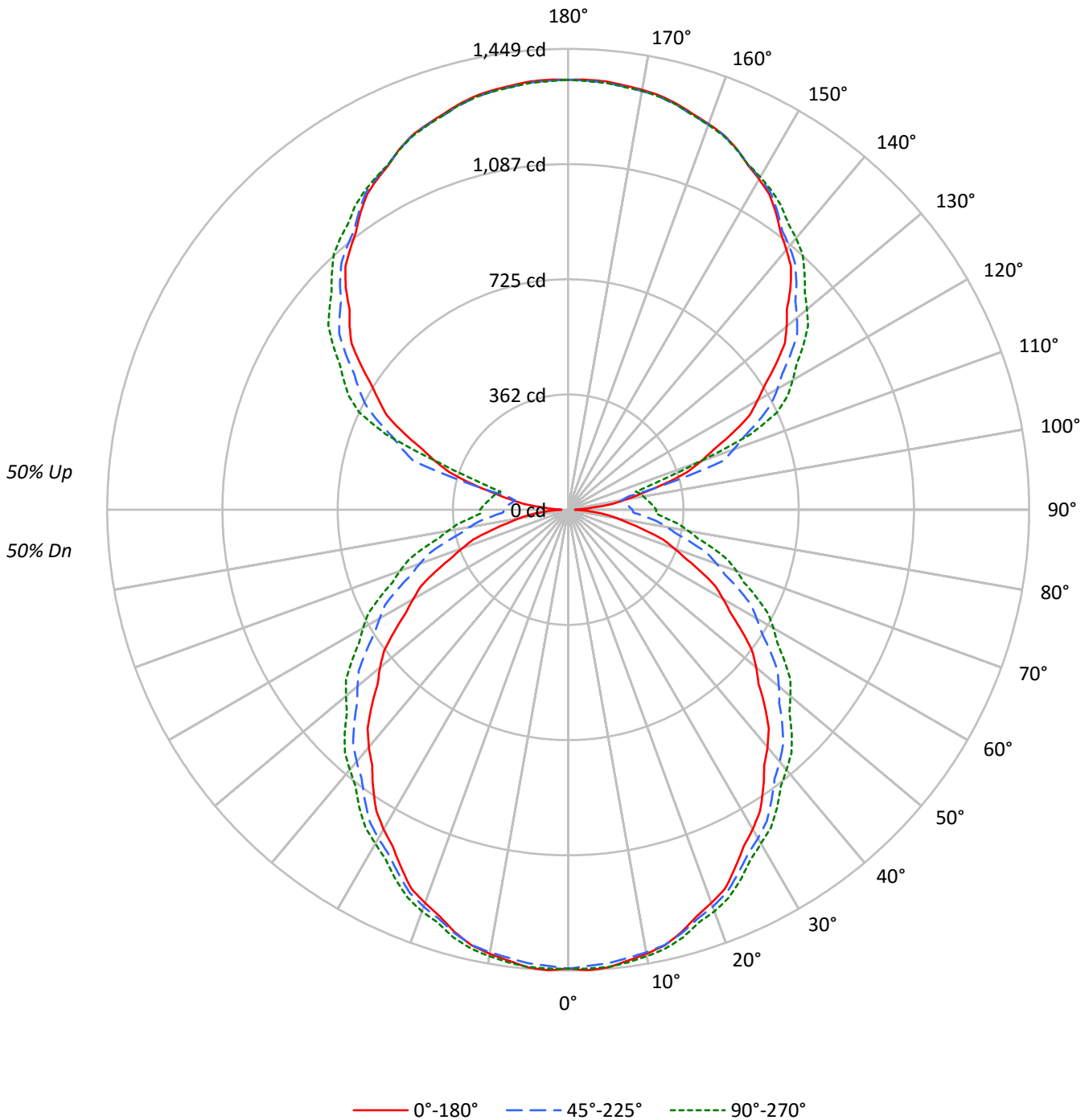
Input Watts (W): 67.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332224

CATALOG NUMBER: S123DIW-S1165D1030U835-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332224

CATALOG NUMBER: S123DIW-S1165D1030U835-4F0-1E-UDD-D

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20										
RC	80									70									50									30									10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0														
RCR																																						
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50																				
1	97	92	88	84	89	85	81	78	71	69	66	59	57	55	48	46	45	40																				
2	88	80	73	68	80	73	68	63	62	58	54	51	48	45	41	39	37	32																				
3	80	70	62	56	73	64	58	52	54	49	45	45	41	38	36	33	31	27																				
4	73	61	53	47	67	57	49	44	48	42	38	40	36	32	32	29	27	23																				
5	67	55	46	40	61	50	43	37	43	37	32	36	31	28	29	26	23	20																				
6	61	49	40	34	56	45	38	32	38	33	28	32	28	24	26	23	20	17																				
7	57	44	36	30	52	41	34	28	35	29	25	29	25	21	24	20	18	15																				
8	52	40	32	27	48	37	30	25	32	26	22	27	22	19	22	18	16	13																				
9	49	36	29	24	45	34	27	22	29	23	20	24	20	17	20	17	14	12																				
10	46	33	26	21	42	31	24	20	27	21	18	23	18	15	19	15	13	11																				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	15532	15532	15532
5°	15581	15141	15150
10°	15441	14792	14718
15°	15242	14397	14247
20°	14958	13944	13729
25°	14607	13423	13185
30°	14248	12956	12632
35°	13844	12460	12191
40°	13459	12010	11719
45°	13033	11577	11342
50°	12611	11149	10926
55°	12146	10713	10553
60°	11692	10267	10169
65°	11230	9793	9712
70°	10529	9260	9244
75°	9643	8650	8768
80°	8626	8052	8224
85°	7681	7639	7911



TEST NUMBER: P332224

CATALOG NUMBER: S123DIW-S1165D1030U835-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.8	1.5
10°-20°	390.0	4.3
20°-30°	583.2	6.5
30°-40°	696.5	7.8
40°-50°	728.7	8.1
50°-60°	683.9	7.6
60°-70°	571.2	6.4
70°-80°	408.7	4.6
80°-90°	247.5	2.8
90°-100°	202.0	2.3
100°-110°	346.6	3.9
110°-120°	637.7	7.1
120°-130°	759.4	8.5
130°-140°	784.8	8.7
140°-150°	720.0	8.0
150°-160°	577.5	6.4
160°-170°	372.7	4.2
170°-180°	128.4	1.4
0°-30°	1110.0	12.4
0°-40°	1806.5	20.1
0°-60°	3219.1	35.9
0°-90°	4446.4	49.5
90°-120°	1186.4	13.2
90°-150°	3450.7	38.4
90°-180°	4529.0	50.5
0°-180°	8975.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1443	1443	1443	1443	1443	
5°	1445	1441	1432	1444	1443	137
15°	1375	1380	1379	1393	1393	387
25°	1242	1257	1262	1282	1283	572
35°	1069	1094	1114	1137	1144	668
45°	874	912	951	980	993	674
55°	666	719	775	816	830	597
65°	461	522	591	636	654	455
75°	250	324	402	452	473	267
85°	77	156	239	290	308	81
90°	21	109	202	257	277	17
95°	79	102	187	240	258	89
105°	312	357	338	212	220	330
115°	569	596	660	706	724	562
125°	796	806	854	888	902	711
135°	988	994	1014	1044	1050	761
145°	1139	1144	1146	1160	1167	712
155°	1252	1251	1252	1256	1250	577
165°	1321	1318	1317	1324	1318	373
175°	1352	1347	1348	1354	1347	129
180°	1352	1352	1352	1352	1352	



TEST NUMBER: P332224

CATALOG NUMBER: S123DIW-S1165D1030U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0
2.5°	1449.3	1448.5	1447.6	1446.8	1445.9	1444.4	1442.2	1439.9	1437.7	1435.5	1437.7
5°	1444.6	1443.9	1443.2	1442.5	1441.8	1440.4	1438.3	1436.2	1434.1	1432.0	1434.8
7.5°	1430.4	1430.6	1430.7	1430.9	1431.0	1430.1	1428.0	1426.0	1424.0	1421.9	1425.4
10°	1417.9	1418.6	1419.3	1420.0	1420.7	1420.1	1418.4	1416.6	1414.9	1413.1	1416.6
12.5°	1402.8	1403.7	1404.7	1405.7	1406.7	1406.6	1405.4	1404.2	1403.0	1401.8	1405.0
15°	1375.4	1376.5	1377.5	1378.6	1379.6	1380.0	1379.6	1379.3	1378.9	1378.6	1382.1
17.5°	1340.8	1342.9	1345.0	1347.1	1349.2	1350.2	1350.1	1349.9	1349.8	1349.6	1352.8
20°	1315.7	1317.8	1319.9	1322.0	1324.1	1325.5	1326.2	1326.9	1327.6	1328.3	1331.4
22.5°	1289.3	1291.4	1293.5	1295.6	1297.7	1299.2	1300.2	1301.2	1302.1	1303.1	1307.1
25°	1241.8	1245.3	1248.8	1252.3	1255.8	1258.0	1259.1	1260.1	1261.2	1262.2	1266.8
27.5°	1194.0	1198.0	1202.0	1206.0	1209.9	1213.1	1215.3	1217.5	1219.8	1222.0	1225.9
30°	1160.1	1164.6	1169.1	1173.7	1178.2	1181.9	1184.7	1187.5	1190.3	1193.1	1197.3
32.5°	1122.3	1127.4	1132.5	1137.6	1142.7	1147.1	1150.7	1154.4	1158.0	1161.6	1166.1
35°	1068.9	1074.5	1080.1	1085.7	1091.3	1096.3	1100.9	1105.4	1109.9	1114.5	1119.7
37.5°	1012.3	1018.6	1024.9	1031.2	1037.5	1043.4	1049.0	1054.6	1060.2	1065.8	1071.7
40°	974.6	980.9	987.2	993.4	999.7	1006.4	1013.4	1020.3	1027.3	1034.3	1040.3
42.5°	933.1	940.8	948.5	956.1	963.8	971.3	978.6	985.8	993.1	1000.4	1006.9
45°	874.0	882.4	890.7	899.1	907.5	916.1	924.8	933.5	942.3	951.0	957.6
47.5°	812.0	821.5	831.0	840.6	850.1	859.8	869.8	879.8	889.8	899.8	907.2
50°	771.8	781.6	791.4	801.1	810.9	821.2	832.1	842.9	853.7	864.5	872.6
52.5°	729.1	739.4	749.7	760.1	770.4	781.6	793.5	805.4	817.4	829.3	837.7
55°	666.5	678.0	689.5	701.1	712.6	724.6	737.2	749.8	762.4	775.0	784.4
57.5°	605.5	617.5	629.5	641.5	653.6	666.5	680.2	694.0	707.7	721.5	731.0
60°	562.7	575.3	587.9	600.5	613.0	626.5	640.8	655.1	669.5	683.8	693.6
62.5°	522.5	535.4	548.2	561.1	573.9	587.9	603.1	618.2	633.4	648.6	658.3
65°	460.6	474.2	487.8	501.4	515.1	529.6	544.9	560.3	575.7	591.0	601.5
67.5°	397.7	412.2	426.6	441.1	455.5	470.6	486.2	501.9	517.5	533.2	544.6
70°	353.7	368.7	383.7	398.7	413.8	429.7	446.4	463.2	480.0	496.7	507.9
72.5°	313.4	328.5	343.5	358.5	373.5	389.7	407.0	424.3	441.7	459.0	470.5
75°	249.9	266.4	282.8	299.2	315.6	332.5	350.0	367.5	384.9	402.4	413.9
77.5°	194.6	211.2	227.7	244.3	260.8	277.9	295.5	313.1	330.7	348.3	360.5
80°	155.6	172.7	189.9	207.0	224.1	241.7	259.9	278.1	296.2	314.4	326.3
82.5°	121.7	139.1	156.5	173.9	191.2	209.2	227.6	246.1	264.5	282.9	294.8
85°	77.0	94.5	112.0	129.4	146.9	164.9	183.4	201.9	220.4	238.9	250.8
87.5°	42.0	59.9	77.7	95.5	113.4	131.5	149.9	168.3	186.7	205.1	217.1
90°	21.4	40.8	60.1	79.5	98.8	118.9	139.6	160.3	181.0	201.7	214.5
92.5°	37.9	52.7	67.5	82.3	97.1	114.4	134.1	153.8	173.6	193.3	206.3
95°	78.6	83.0	87.5	92.0	96.4	108.5	128.0	147.6	167.2	186.8	199.1
97.5°	138.5	146.7	154.9	163.1	171.3	175.5	175.8	176.1	176.4	176.6	188.8
100°	183.9	199.5	215.2	230.8	246.5	244.9	226.2	207.4	188.7	169.9	181.8
102.5°	235.7	248.9	262.2	275.5	288.8	284.3	262.0	239.8	217.5	195.3	199.6
105°	311.9	322.7	333.6	344.4	355.2	358.1	353.1	348.0	342.9	337.9	308.1
107.5°	390.8	399.8	408.9	418.0	427.1	440.4	457.8	475.2	492.6	510.1	490.4
110°	443.3	451.4	459.5	467.6	475.6	487.9	504.3	520.7	537.2	553.6	555.3



TEST NUMBER: P332224

CATALOG NUMBER: S123DIW-S1165D1030U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	494.8	501.5	508.3	515.1	521.9	533.2	549.1	564.9	580.8	596.7	605.6
115°	569.3	574.9	580.4	585.9	591.4	601.5	616.1	630.7	645.3	659.8	670.5
117.5°	642.7	647.0	651.2	655.4	659.7	668.2	681.0	693.9	706.7	719.5	729.6
120°	687.3	691.0	694.8	698.5	702.3	710.3	722.5	734.7	746.9	759.1	768.9
122.5°	733.9	736.4	739.0	741.6	744.1	751.3	763.1	774.9	786.8	798.6	807.6
125°	796.2	798.0	799.8	801.5	803.3	809.7	820.8	831.8	842.8	853.8	861.6
127.5°	858.1	859.5	860.9	862.4	863.8	869.2	878.7	888.2	897.6	907.1	914.7
130°	896.6	898.1	899.5	900.9	902.4	907.0	914.9	922.8	930.7	938.5	946.1
132.5°	932.3	934.0	935.8	937.5	939.2	943.2	949.5	955.8	962.1	968.4	975.7
135°	988.5	989.5	990.4	991.4	992.4	995.3	1000.0	1004.8	1009.5	1014.2	1021.2
137.5°	1036.4	1037.8	1039.2	1040.6	1042.0	1044.1	1046.7	1049.4	1052.0	1054.7	1061.3
140°	1067.2	1068.6	1069.9	1071.3	1072.6	1074.1	1075.8	1077.6	1079.3	1081.0	1087.1
142.5°	1097.0	1098.0	1099.1	1100.2	1101.2	1102.2	1103.1	1103.9	1104.8	1105.7	1111.1
145°	1138.6	1139.8	1141.0	1142.2	1143.4	1144.2	1144.7	1145.1	1145.6	1146.0	1149.3
147.5°	1176.2	1177.2	1178.2	1179.2	1180.3	1181.0	1181.4	1181.9	1182.3	1182.8	1184.1
150°	1200.3	1200.9	1201.6	1202.3	1202.9	1203.5	1203.9	1204.4	1204.8	1205.3	1205.7
152.5°	1222.0	1222.3	1222.6	1222.9	1223.2	1223.5	1223.8	1224.0	1224.3	1224.6	1225.4
155°	1252.5	1252.0	1251.6	1251.2	1250.7	1250.6	1250.8	1251.0	1251.3	1251.5	1252.6
157.5°	1276.2	1276.2	1276.1	1276.1	1276.0	1275.9	1275.7	1275.4	1275.2	1275.0	1276.3
160°	1290.7	1290.4	1290.2	1290.0	1289.8	1289.5	1289.3	1289.1	1288.9	1288.7	1290.0
162.5°	1304.3	1303.7	1303.2	1302.6	1302.0	1301.6	1301.4	1301.2	1300.9	1300.7	1302.2
165°	1320.8	1320.1	1319.5	1318.8	1318.1	1317.7	1317.4	1317.2	1317.0	1316.8	1318.6
167.5°	1333.6	1332.8	1331.9	1331.0	1330.1	1329.6	1329.6	1329.6	1329.6	1329.6	1331.4
170°	1340.9	1340.0	1339.1	1338.2	1337.3	1336.9	1336.9	1336.9	1336.9	1336.9	1338.6
172.5°	1345.7	1344.6	1343.6	1342.5	1341.4	1341.0	1341.1	1341.3	1341.5	1341.7	1343.5
175°	1351.9	1350.8	1349.7	1348.6	1347.5	1347.0	1347.2	1347.5	1347.7	1347.9	1349.5
177.5°	1353.5	1352.6	1351.8	1350.9	1350.0	1349.6	1349.8	1350.0	1350.1	1350.3	1351.8
180°	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9



TEST NUMBER: P332224

CATALOG NUMBER: S123DIW-S1165D1030U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0
2.5°	1439.9	1442.2	1444.4	1445.4	1445.1	1444.8	1444.5	1444.3
5°	1437.6	1440.4	1443.2	1444.4	1444.1	1443.7	1443.4	1443.0
7.5°	1428.9	1432.4	1435.9	1437.5	1437.0	1436.6	1436.2	1435.8
10°	1420.1	1423.6	1427.1	1428.5	1427.8	1427.1	1426.4	1425.7
12.5°	1408.3	1411.5	1414.7	1415.9	1415.2	1414.5	1413.8	1413.1
15°	1385.5	1389.0	1392.5	1394.1	1393.8	1393.4	1393.1	1392.7
17.5°	1355.9	1359.1	1362.2	1363.5	1363.1	1362.6	1362.1	1361.6
20°	1334.5	1337.7	1340.8	1342.6	1342.9	1343.3	1343.6	1344.0
22.5°	1311.1	1315.1	1319.0	1320.9	1320.7	1320.5	1320.3	1320.1
25°	1271.3	1275.9	1280.4	1282.7	1282.7	1282.7	1282.7	1282.7
27.5°	1229.8	1233.7	1237.6	1239.7	1240.0	1240.3	1240.6	1240.9
30°	1201.5	1205.7	1209.8	1211.9	1211.9	1211.9	1211.9	1211.9
32.5°	1170.6	1175.1	1179.5	1182.2	1183.0	1183.9	1184.7	1185.5
35°	1125.0	1130.2	1135.4	1138.8	1140.2	1141.6	1143.0	1144.3
37.5°	1077.6	1083.6	1089.5	1093.0	1094.2	1095.3	1096.4	1097.5
40°	1046.2	1052.1	1058.1	1061.7	1063.1	1064.5	1065.9	1067.3
42.5°	1013.4	1019.9	1026.4	1030.6	1032.5	1034.5	1036.4	1038.4
45°	964.3	970.9	977.6	982.3	985.1	987.9	990.7	993.4
47.5°	914.7	922.2	929.7	934.5	936.6	938.8	941.0	943.1
50°	880.6	888.7	896.7	901.9	904.4	906.8	909.3	911.7
52.5°	846.0	854.3	862.6	868.3	871.3	874.3	877.3	880.3
55°	793.8	803.2	812.7	818.8	821.6	824.4	827.2	830.0
57.5°	740.5	750.0	759.5	765.9	769.2	772.5	775.8	779.0
60°	703.3	713.1	722.9	729.7	733.6	737.4	741.2	745.1
62.5°	668.1	677.9	687.7	694.4	697.9	701.5	705.1	708.6
65°	612.0	622.5	633.0	639.9	643.4	646.9	650.4	653.9
67.5°	556.1	567.6	579.0	586.2	589.2	592.1	595.0	598.0
70°	519.1	530.3	541.4	548.8	552.3	555.8	559.2	562.7
72.5°	481.9	493.4	504.8	512.3	515.8	519.3	522.8	526.3
75°	425.5	437.0	448.5	456.4	460.6	464.8	469.0	473.1
77.5°	372.6	384.8	397.0	404.6	407.9	411.1	414.3	417.5
80°	338.1	350.0	361.9	369.6	373.1	376.6	380.1	383.5
82.5°	306.7	318.6	330.4	338.1	341.6	345.1	348.6	352.1
85°	262.7	274.6	286.4	294.1	297.6	301.1	304.6	308.1
87.5°	229.2	241.2	253.3	261.1	264.7	268.3	271.9	275.5
90°	227.3	240.0	252.8	261.2	265.1	269.0	273.0	276.9
92.5°	219.3	232.4	245.4	253.6	257.1	260.6	264.1	267.6
95°	211.5	223.9	236.3	244.3	247.8	251.2	254.7	258.2
97.5°	201.0	213.2	225.4	233.4	237.1	240.8	244.5	248.2
100°	193.7	205.6	217.6	225.4	229.1	232.8	236.5	240.2
102.5°	203.9	208.2	212.6	216.7	220.6	224.5	228.4	232.2
105°	278.4	248.7	219.0	205.9	209.5	213.1	216.7	220.2
107.5°	470.8	451.2	431.6	408.5	381.8	355.1	328.4	301.7
110°	557.0	558.7	560.5	546.8	517.6	488.5	459.4	430.3





TEST NUMBER: P332224

CATALOG NUMBER: S123DIW-S1165D1030U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	614.5	623.5	632.4	635.0	631.4	627.7	624.0	620.4
115°	681.1	691.7	702.3	709.5	713.1	716.8	720.5	724.2
117.5°	739.7	749.8	759.9	766.4	769.3	772.3	775.2	778.1
120°	778.7	788.5	798.3	804.5	806.9	809.4	811.8	814.3
122.5°	816.6	825.6	834.6	840.4	843.0	845.7	848.3	850.9
125°	869.4	877.2	885.0	890.3	893.2	896.1	899.0	901.9
127.5°	922.3	930.0	937.6	942.4	944.3	946.2	948.2	950.1
130°	953.6	961.1	968.7	973.3	974.9	976.6	978.2	979.9
132.5°	982.9	990.2	997.4	1001.9	1003.7	1005.4	1007.2	1008.9
135°	1028.1	1035.1	1042.1	1046.1	1047.2	1048.2	1049.3	1050.4
137.5°	1067.9	1074.5	1081.1	1085.0	1086.3	1087.6	1088.9	1090.2
140°	1093.3	1099.4	1105.5	1109.2	1110.5	1111.8	1113.1	1114.4
142.5°	1116.5	1121.9	1127.3	1130.5	1131.7	1132.8	1133.9	1135.0
145°	1152.5	1155.7	1159.0	1161.3	1162.7	1164.1	1165.5	1166.9
147.5°	1185.4	1186.6	1187.9	1188.7	1188.9	1189.1	1189.4	1189.6
150°	1206.2	1206.6	1207.1	1207.3	1207.3	1207.4	1207.4	1207.4
152.5°	1226.2	1227.0	1227.8	1227.7	1226.9	1226.0	1225.1	1224.2
155°	1253.7	1254.8	1256.0	1255.8	1254.5	1253.2	1251.8	1250.5
157.5°	1277.7	1279.0	1280.3	1280.1	1278.4	1276.7	1274.9	1273.2
160°	1291.3	1292.7	1294.0	1293.9	1292.3	1290.8	1289.2	1287.6
162.5°	1303.7	1305.3	1306.8	1306.8	1305.5	1304.1	1302.7	1301.3
165°	1320.3	1322.1	1323.9	1324.0	1322.5	1320.9	1319.3	1317.8
167.5°	1333.2	1335.0	1336.8	1336.8	1335.0	1333.2	1331.4	1329.6
170°	1340.4	1342.2	1344.0	1344.0	1342.2	1340.4	1338.6	1336.9
172.5°	1345.3	1347.0	1348.8	1348.7	1346.8	1344.8	1342.8	1340.9
175°	1351.0	1352.6	1354.2	1354.1	1352.3	1350.5	1348.7	1346.9
177.5°	1353.2	1354.6	1356.0	1355.9	1354.1	1352.3	1350.5	1348.7
180°	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9

(END OF REPORT)